

## Improvement of Four-Zone Simulated Moving Bed Process by Zone Profile Shifting: High Purity Products

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The performance of four zone simulated moving bed (SMB) process can be improved by the concentration profile shifting of zone II and III. Flow rates of zone II and III are adjustable by simple on/off operation of product stream. This strategy can give more improved results than partial discard method. In conventional SMB process, product streams usually have periodic contaminations. Therefore, it is possible to discard uniform fraction of product stream at the expense of recovery and enrichment of products. In this work, the contaminated products were not collected but shifted to zone II or III to separate. So, the recovery and enrichment of products could be held and high purity of products could be accomplished as compared with conventional four-zone SMB process and the partial discard strategy. This operating modification for profile shifting requires no more additional equipments and can be adopted to already established SMB process to improve the purity of products. Moreover it has very simple operation properties.